Summary of Weldon Spring Site Focus Area
Work Session
February 5, 2003
Weldon Spring Interpretive Center
Focus Area: Monitoring and Maintenance

This was the third of three work sessions that focus on specific issues addressed in the draft *Long-Term Stewardship Plan for the Weldon Spring, Missouri, Site*, dated August 9, 2002.

At 6:00 p.m., before the start of the work session, Dan Collette, Technical Support Manager for S.M. Stoller, the U.S. Department of Energy (DOE) Grand Junction Office (GJO) contractor, gave a demonstration of the on-line document retrieval and geographic information systems.

Introduction
Dave Geiser, DOE Headquarters Director of the Office of Long-Term Stewardship, discussed a DOE Headquarters proposal to establish the Office of Legacy Management in fiscal year 2004. This organization would provide stewardship services for closed DOE sites, including the Weldon Spring site. The relevant portion of the fiscal year 2004 Congressional budget is available at http://www.mbe.doe.gov/budget/04budget/content/otherdef/lm.pdf. Mr. Geiser talked about the ramifications for the Long-Term Surveillance and Maintenance Program and long-term stewardship at the Weldon Spring Site.

Major Issue 1: Monitoring and Operations

Comments relating to Monitoring and Operations: A-54, 75, 109, 110, 125, 126, 128, 130, 131, 134, 135, 136, 137, 149, 155, 165, 170, 171, 174, 175, 176, 177, 179, 180, 181, 182, 183, 184, 186, 189, 190, 191, 193, 194, 196, 198, 203, 279, 280, 282; B-22, 33, 43, 44, 46, 47, 48, 49; F-13, 14, 15, 16; H-3, 24, 25, 26, 28, 29, 30; I-2; J-4, 5, 6, 8, 9, 10, 12, 14, 15, 18, 23, 53, 54, 59; K-14, 15, 20, 21, 22; L-56, 67, 72, 84, 89, 91, 92, 94, 95, 134, 135, 137, 138, 139, 140, 141, 143, 144, 145, 146, 147, 149, 150, 151, 152, 154, 155, 163, 166, 170, 171, 172, 173, 174, 178, 186

Monitoring groundwater and springs

- The Environmental Monitoring Plan for the Weldon Spring Site presents baseline data and current monitoring requirements. Data tracking and trending is also addressed. All monitoring requirements will be conveyed in the Environmental Monitoring Plan until the LTS Plan is finalized.
- Surface water, groundwater, and spring monitoring
  – Disposal Cell—monitoring of surface water and groundwater in and around the cell is conducted annually
  – Former Chemical Plant Area—DOE will conduct monitoring in accordance with the Environmental Monitoring Plan until a remedy is approved and monitoring requirements are established through an approved remedial action/remedial design work plan.
  – Former Quarry Area—DOE conducts monitoring at the quarry in accordance with the approved remedial design/remedial action work plan. This plan was developed to track contaminant movement and maintain the safety of the public water supply in the nearby alluvial aquifer.

- Sample results for different analytes and time periods are available on the Geospatial Environmental Mapping System on-line database for Weldon Spring at http://gems.gjo.doe.gov/index.cfm (open in Internet Explorer version 5.5 or newer).

Questions and Comments:

- Why is the St. Charles County well field only monitored quarterly and not monthly? Response: Based on the contaminant characteristics (such as travel time and interaction with the aquifer materials), quarterly monitoring provides ample warning and time for DOE to respond to changes in ground water conditions.
- How often do you sample the RMW wells (county wells; see Figure 2–19 in August 9, 2002, draft Long-Term Stewardship Plan)? Response: DOE will monitor them annually in 2003, and the county will monitor them quarterly.
- Are there precursor indicators that contamination is moving toward the production wells? Response: Yes, the chemical characteristics of the water near the quarry are favorable toward preventing migration of contamination. These chemical characteristics are monitored and any changes evaluated. The four lines of monitoring wells provide additional advance information should contaminants begin to migrate toward the production wells. With the waste sources removed from the Quarry, the expectation is that the water quality in the area will continue to improve over time and not impact the production wells. This will be assessed during the 5-year review.
- Is there a contingency to sample more often if a major seismic event occurs? Response: There is a contingency plan in place for possible outcomes of such an event, including relocating the well field as a last resort, if necessary.
- Who decided how much contamination is okay? Response: The U.S. Environmental Protection Agency (EPA) calculated risk-based concentrations of contaminants. An explanation was provided of how safe contaminant levels are established. The Agency for Toxic Substances and Disease Registry provides health risk information on many substances.
- The county production wells should be sampled for constituents of concern in the quarry area. Response: The county is testing these wells. There was some discussion about what is meant by the term "background". The Missouri River alluvium has higher background levels for uranium than the shallow aquifer near the main site, which is recharged solely from local precipitation.
- Will DOE discontinue monitoring sometime in the future? Response: Not without regulator approval. However, up-front regulator approval for reductions in sampling frequencies, as well as eventual elimination of sampling, is a component of the approved Quarry Residuals Remedial Design/ Remedial Action Workplan that covers long term monitoring. DOE anticipates similar “built-in” sampling frequency changes to be a component of the main site groundwater decision documents. This approach provides a common understanding of what circumstances will lead to more or less monitoring, possible contingency activities and eventual cessation of monitoring. Monitoring of the disposal cell will continue at some frequency for the foreseeable future. The current frequencies of monitoring will be subject to reevaluation for continued protectiveness during the 5-year reviews.
- Concerns about safe drinking water were expressed. Response: DOE committed to prepare a fact sheet that describes the decision-making process for monitoring that is protective of human health and the environment.

Monitoring the leachate collection-and-removal system (LCRS)

- The LCRS provides a means to monitor, contain, and remove leachate that collects within the disposal cell.
- The components inside and outside of the cell were described.
- The flow from the system is monitored daily and any system maintenance performed as needed
- Leachate production will essentially diminish to nothing over a period of about 10 years. The leachate exceeds discharge limits for manganese. Concentrations of uranium and other constituents are less than the discharge goals and/or regulatory limits.

Questions and comments:

- Does the existence of secondary leachate production mean the primary collection system is failing? Response: No, this does not indicate failure of the primary collection system. Pinhole-size holes occur normally in any liner system. They are considered in the design of the system and in the establishment of an action leak rate. The hazardous landfill action leak rate guidance that is given by EPA was used in the development of the action leak rate for the disposal cell leachate collection system. Our regulators and DOE agreed to a more conservative or restricted rate of 100 gallons per acre per day (or 2,640 gallons per day for the cell) as the rate at which we would reevaluate the leachate collection system currently. Only 15 total gallons of leachate per day is collected in the secondary collection system over the floor of the interior of the cell, which is 26.4 acres.
- Will the liner deteriorate in 25 years? Response: Drainage from the disposal cell should cease within 10 years; the clay liner will stop incidental leachate drainage after that time.
- What constituents is DOE monitoring in the leachate? Response: DOE monitors for 40 contaminants. Manganese is the only contaminant that exceeds the site's National Pollutant Discharge Elimination System (NPDES) permit. Uranium and the other monitored contaminants do not exceed the NPDES discharge limits and goals.
- Which municipal sewer district is the leachate taken to? Response: The Metropolitan St. Louis Sewer District's Bissel Point Plant. An explanation of the radiation allocation for leachate disposal was provided.
- Explain exterior features of the leachate system. Response: There is a building for a treatment system that was not made operational. The sump is fenced. These areas are protected by an alarm system. A local contractor performs monitoring and disposal operations.
- Is fluoride from the leachate monitored? Response: Yes, on a semiannual basis. Fluoride in the leachate was monitored at the site for several years. Our analysis over the past few years indicated that the fluoride concentration in the leachate was below any applicable regulatory limit. This data was provided to the Metropolitan St. Louis Sewer District for review. The district determined it does not require continued monitoring.
- Then how do you know fluoride is not coming out of the cell? Response: Fluoride is in the leachate. Ordinary sanitary wastewater treatment plants remove trace nutrients, such as fluoride. (Additional information not provided during the meeting: Under the Disposal Cell Groundwater Monitoring Plan, fluoride will be monitored semiannually in the five disposal cell wells and Burgermeister Spring as a ground water quality indicator, not because it is in the leachate. The leachate will also be monitored under this plan at the same frequency.)

- Will monitoring data be posted on the website? Response: The chemical data will be available on the Geospatial Environmental Mapping System on-line database at http://gems.gjo.doe.gov/index.cfm. Flow information is not currently part of this application.

Major Issue 2: Annual Site Inspections/Maintenance

Comments relating to Annual Site Inspections/Maintenance: A-138, 152, 156, 161, 163, 202, 204, 205, 234, 236, 237, 238, 239, 253, 255, 256, 260, 272; B-5, 32, 34, 35, 39, 40, 42, 50, 51; E-16, 21; H-12, 15, 17, 18; J-2, 3, 20, 22; K-18, 19, 23, 25; L-17, 19, 22, 23, 24, 27, 31, 102, 104, 108, 113, 116, 118, 119, 120, 121, 122, 123, 124, 125, 126, 129, 130, 132, 136, 142, 156, 158

Routine Maintenance

- An explanation of the annual site inspection process and activities was provided. Inspectors walk the entire disposal cell to visually inspect, and order repairs if necessary, for the following:
  – Cell integrity
  – Vegetation control on disposal cell cover and in the buffer zone
  – Disposal cell ramp
  – Sign replacement

Non-Routine Maintenance

- The following maintenance items are considered non-routine, but are addressed as needed:
  – Repair erosion at Chemical Plant or quarry
  – Repair leachate collection and removal system data recorders
  – Disposal cell settlement or rock degradation

Questions and comments:

- Does the DOE–GJO have stewardship responsibilities for any other disposal sites that are in a similar climate? Response: Yes, GJO has sites in Pennsylvania, south Texas, Oregon, and Idaho. Several disposal sites that GJO monitors are larger than the Weldon Spring site.
- Does DOE monitor the cell runoff for residual pesticides used to control vegetation on the disposal cell? Response: No, because the pesticide is applied directly to the cut stump, not over the entire cover.
- Will DOE do any monitoring during annual inspections? Response: No, the inspectors only do a visual check of the site features.

Institutional Controls (ICs)

- IC review activities to be conducted annually:
  – IC areas will be visually inspected.
  – Agencies associated with each IC will be contacted and issues discussed.
  – IC documentation will be reviewed at St. Charles County government offices as appropriate.
  – Interpretive Center annual usage summary report will be prepared.

5-Year Reviews

- Are a Comprehensive Environmental Response, Compensation, and Liability Act requirement to evaluate remedy protectiveness.
- Will include information contained in the annual inspection reports.

- Will adhere to current EPA guidance.
- The next 5-year review will be completed in 2006.

Timetable

- DOE is working on the revised draft of the Long-Term Stewardship Plan, which is scheduled to be issued in May 2003. This revised plan will include information known to-date on institutional controls, but will not include information on the Ground Water Operable Unit Record of Decision because it will not be available yet. DOE feels it is important to issue the revised draft in May to ensure the comments provided on the August 9, 2002, draft are addressed. The final Long-Term Stewardship Plan will be issued after the Ground Water Operable Unit Record of Decision and institutional controls have been finalized.
- DOE plans to issue the Proposed Plan for the Ground Water Operable Unit in Spring 2003. This document will be released for a 30-day public comment period. During the comment period, DOE will hold a public meeting to discuss the Proposed Plan.